

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 4-6, 10-12, 16 and 32-46 are presently pending in this application, Claims 4, 10, 16, 32, 33, 35, 36, 40, 41, 44 and 45 having been amended by the present amendment.

In the outstanding Office Action, Claim 4 was rejected under 35 U.S.C. §102(b) as being anticipated by WO 01/23069 (hereinafter “WO ‘069”); Claims 5 and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over WO ‘069; Claims 10 and 32-37 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO ‘069 in view of EP 0 361 883 (hereinafter “EP ‘883”); and Claims 16, 38-41 and 44-46 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ohno et al. (U.S. Patent 6,669,751) in view of EP ‘883. However, Claims 11, 12, 42 and 43 were indicated as including allowable subject matter.

First, Applicants acknowledge with appreciation the indication that Claims 11, 12, 42 and 43 include allowable subject matter. However, Claims 11, 12, 42 and 43 are presently maintained in their respective dependent forms, because Applicants believe that Claims 4, 10 and 16 as currently amended include allowable subject matter.

Claims 4, 10 and 16 have been amended to clarify the subject matter recited therein, and Claims 32, 33, 35, 36, 40, 41, 44 and 45 have been amended accordingly. These amendments find clear support in the specification, claims and/or drawings as originally filed, for example, the specification, page 49, line 2, to page 51, line 25, as well as page 65, line 21, to page 67, line 33, and no new matter is believed to be added thereby. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually agreeable claim language.

Before addressing the outstanding rejections based on the cited references, a brief review of Claim 4 as currently amended is believed to be helpful. Claim 4 is directed to a honeycomb filter for purifying exhaust gases and recites, *inter alia*, “a plurality of columnar porous ceramic members...; and an adhesive layer combining said columnar porous ceramic members with one another and formed by drying an adhesive paste including a pore forming material which forms a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer becomes lower than a thermal capacity per unit volume of the porous ceramic members.”

By providing such an adhesive layer and/or a coating material layer, the columnar porous ceramic members are bonded by a solidified adhesive paste which is not fired at an extremely high temperature such as 1,100 °C and which forms thermal capacity reducing pores, *thereby not sintering or vitrifying to form a dense sintered or vitrified body*, while effectively lowering the thermal capacity of a honeycomb filter without compromising the mechanical strength of the porous ceramic member. As a result, the adhesive/coating material layer provides the porous ceramic filter which better withstands a regenerating process of high-temperature, burning of unevenly accumulated particles in the filter and deters cracking in the porous ceramic filter.

It is respectfully submitted that neither WO ‘069 nor EP ‘883 teaches or suggests “an adhesive layer combining said columnar porous ceramic members with one another and *formed by drying an adhesive paste including a pore forming material which forms a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer becomes lower than a thermal capacity per unit volume of the porous ceramic members*” as recited in amended Claim 4 (emphasis added in italic).

WO '069 states that “[w]hen selecting the sintered porous silicon carbide, it is preferred that the heat conductance of the filter F1 be 20W/mK to 80W/mK, and more particularly, 30W/mK to 70W/mK”¹ and that “the heat conductance of the seal layer 15 be 0.1W/mK-10W/mK, and more particularly be 0.2W/mK-2W/mK.”² Furthermore, WO '069 states that “[i]f the heat conductance is less than 0.1W/mK, the heat conductance of the seal layer 15 cannot be sufficiently improved”³ and that “the seal layer 15 continues to be a large resistance and hinders heat conduction between filters F1.”⁴ Thus, according to WO '069, the seal layer 15 should possess a relatively high heat conductance, and it is respectfully submitted that WO '069 achieves this by forming a dense sealing layer having a high heat conductance. And in fact, nowhere is WO '069 believed to describe that the seal layer 15 be formed with an adhesive paste including a pore forming material.⁵ It is believed that an adhesive layer having pores which lowers its thermal capacity per unit volume to be less than that of the porous ceramic members would be contrary to the sealing layer of the WO '069 structure.

As discussed in the previous response, EP '833 describes that after bonding the matrix segments with a bonding material, a resultant bonded structure is fully dried and fired at 1,100 °C to 1,200 °C for 1 to 4 hours.⁶ As such, the bonding material is believed to become a sintered or vitrified body formed by the firing process, different from a porous adhesive layer formed simply by drying. Furthermore, even assuming, *arguendo*, that the bonding material of EP '833 result in some pore formation, such pores in the sealing layer would decrease the heat conductance and thus are not desirable in the WO '069 structure.

¹ WO '069, page 9, lines 8-10 (see Ohno et al., column 6, lines 8-11).

² WO '069, page 9, lines 14-15 (see Ohno et al., column 6, lines 17-19).

³ WO '069, page 9, lines 16-17 (see Ohno et al., column 6, lines 20-22).

⁴ WO '069, page 9, lines 17-18 (see Ohno et al., column 6, lines 22-23).

⁵ See, for example, WO '069, page 14, lines 20-26, and page 16, lines 1-9 and 15-22, (see Ohno et al., column 9, lines 26-34, and column 10, lines 13-24 and lines 33-44).

⁶ See, for example, EP '833, page 3, lines 24-33 and lines 43-50.

Therefore, it is respectfully submitted that the subject matter recited in Claim 4 is distinguishable from WO '069 and EP '883. In addition, because neither WO '069 nor EP '883 discloses the adhesive layer as recited in amended Claim 4, their teachings even combined are not believed to render the honeycomb filter of Claim 4.

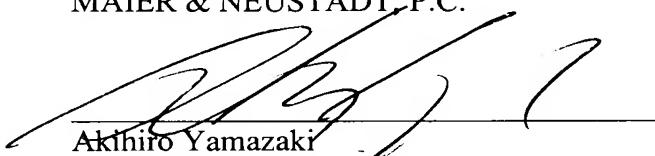
Likewise, Claims 10 and 16 have been amended to incorporate subject matter substantially similar to what is recited in Claim 4 to the extent discussed above. Thus, Claims 10 and 16 are also believed to be distinguishable from WO '069 and EP '883.

For the foregoing reasons, Claims 4, 10 and 16 are believed to be allowable. Furthermore, since Claims 5-6, 11-15 and 32-46 depend directly or indirectly from one of Claims 4, 10 and 16, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 5-6, 11-15 and 32-46 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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